IN THE CLAIMS:

Please cancel claim 6, and amend the claims as follows:

1. (Currently Amended) A charged particle emission component for providing a charged particle beam, comprising:

a first ultra-high vacuum (UHV) region wherein the first UHV region does not comprise elements, which essentially block a portion of the charged particle beam;

a second UHV region; and

a residual gas diffusion barrier separating the first and the second UHV regions, wherein the first and the second UHV regions each have a vacuum flange, wherein the residual gas diffusion barrier is in beam direction directly subsequent to the emitter and acts as an electrode for extracting or modulating emitted charged particles.

2. (Previously Presented) The charged particle emission component according to claim 1, further comprising an emitter in the first UHV region for emitting the charged particle beam.

3. (Previously Presented) The charged particle emission component according to claim 1, further comprising an aperture unit for differential pumping between the emission component and a further chamber of a charged particle beam column.

4. (Previously Presented) The charged particle emission component according to claim 1, wherein the residual gas diffusion barrier has an opening with a diameter larger than the diameter corresponding to a beam emission angle.

5. (Previously Presented) The charged particle emission component according to claim 1, wherein the residual gas diffusion barrier has an opening for the charged particle beam, the opening having a size of at least 1 mm.

6. (Cancelled)

7. (Previously Presented) The charged particle emission component according to claim 1, further comprising at least one beam shaping element in the second UHV region, wherein the at least one beam shaping element blocks a portion of the charged particle beam by having an opening for the charged particle beam, the opening having a size corresponding to a beam emission angle less than 5°.

8. (Previously Presented) The charged particle emission component according to claim 1, wherein the first and the second UHV regions have in operation a maximum pressure of 10^{-8} mbar.

9. (Previously Presented) The charged particle emission component according to claim 1, wherein the first and the second UHV regions have in operation a maximum pressure difference of one order of magnitude.

10. (Previously Presented) The charged particle emission component according to claim 1, wherein the amount of charged particles impinging on surfaces located in the first UHV region is maximally 20% of an amount of charged particles impinging on surfaces located in the emission component.

11. (Previously Presented) The charged particle emission component according to claim 1, wherein the first vacuum flange corresponding to the first UHV region and the second vacuum flange corresponding to the second UHV region are connected to one vacuum pump.

12. (Previously Presented) The charged particle emission component according to claim 1, wherein the first vacuum flange corresponding to the first UHV region and the second vacuum flange corresponding to the second UHV region are connected to separate vacuum pumps.

13. (Previously Presented) The charged particle emission component according to claim 1, wherein the residual gas diffusion barrier is an isolating aperture and the first and the second UHV regions are UHV chambers.

14. (Currently Amended) A charged particle emission component for providing a charged particle beam, comprising:

a housing of the charged particle emission component;

an emitter for emitting the charged particle beam with a beam emission angle;

at least one beam shaping element; and

a residual gas diffusion barrier in beam direction directly subsequent to the emitter, wherein the residual gas diffusion barrier separates the charged particle emission component into a first and a second ultra-high vacuum (UHV) region, wherein the residual gas diffusion barrier has an opening with a diameter larger than the diameter corresponding to the beam emission angle and acts as an electrode for extracting or modulating emitted charged particles, and wherein the first and the second UHV regions each have a vacuum flange.

15. (Previously Presented) The charged particle emission component according to claim 14, wherein the first UHV region does not comprise elements, which essentially block a portion of the charged particle beam.

16. (Previously Presented) The charged emission component according to claim 14, further comprising an aperture unit for differential pumping between the emission component and a further chamber of a charged particle beam column.

17. (Previously Presented) The charged particle emission component according to claim 1, wherein surfaces of the first UHV region are the surfaces of at least the following components:

the emitter,

the residual gas diffusion barrier, and

a part of the emission component housing corresponding to the first UHV region,

and wherein surfaces of the second UHV region are the surfaces of at least the following components:

the at least one beam shaping element,

a differential pumping aperture, and

a part of the emission component housing corresponding to the second UHV region.

18. (Currently Amended) A charged particle beam device comprising a charged particle emission component, the emission component comprising:

a first ultra-high vacuum (UHV) region wherein the first UHV region does not comprise elements which essentially block a portion of the charged particle beam;

a second UHV region; and

a residual gas diffusion barrier in beam direction directly subsequent to the emitter and separating the first and the second UHV regions, wherein the first and the second UHV regions each have a vacuum flange, wherein the residual gas diffusion barrier acts as an electrode for extracting or modulating the emitted charged particles.

19. (Currently Amended) A method of operating a charged particle beam device, wherein the charged particle beam device has a residual gas diffusion barrier that is in beam direction directly subsequent to an emitter and acts as an electrode for extracting or modulating emitted charged particles, the method comprising:

evacuating a first ultra-high vacuum (UHV) region to a maximum pressure of 10^{-8} mbar;

evacuating a second UHV region to a maximum pressure of 10^{-8} mbar;

evacuating at least a further chamber to a maximum pressure of 10^{-5} mbar; and

emitting a charged particle beam such that a portion of the charged particle beam is essentially not blocked by the residual gas diffusion barrier within the first UHV region.

20. (Previously Presented) The method of operating a charged particle beam device according to claim 19, wherein:

the charged particle beam is emitted with an emission angle such that the amount of charged particles impinging on surfaces located in the first UHV region is maximally 20 % of the amount of charged particles impinging on surfaces located in the first and the second UHV regions.

21. (Previously Presented) The method of operating a charged particle beam device according to claim 19, wherein a portion of the beam is blocked in the second UHV region, such that the beam is shaped.

22. (New) The charged particle emission component according to claim 1, wherein the residual gas diffusion barrier comprises a barrier that separates an emitter and at least one of an anode, a lens, and a differential pressure aperture, wherein the barrier has a central passage between the emitter and the anode or lens.

23. (New) The charged particle emission component according to claim 14, wherein the residual gas diffusion barrier comprises a barrier that separates an emitter and at least one of an anode, a lens, and a differential pressure aperture, wherein the barrier has a central passage between the emitter and the anode or lens.

24. (New) The charged particle emission component according to claim 18, wherein the residual gas diffusion barrier comprises a barrier that separates an emitter and at least one of an anode, a lens, and a differential pressure aperture, wherein the barrier has a central passage between the emitter and the anode or lens.